

**VIT****Vellore Institute of Technology**
(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF BIO SCIENCES AND TECHNOLOGY
CONTINUOUS ASSESSMENT TEST -I
FALL SEMESTER 2025-2026

Programme Name & Branch : M.Sc., Integrated Biotechnology
Course Code : TBIT301L
Course Name : Analytical Techniques
Slot : A1+TA1
Faculty Name(s) : Dr.K.Kannabiran
Class Number(s) : VL2025260101018
Date of Examination : 17.08.2025
Exam Duration : 90 minutes

Maximum Marks: 50

General instruction(s): Answer ALL the Questions

Q. No	Question	Marks	Course Outcome (CO)	Bloom's Taxonomy (BL)
1.	List out the various personal protective equipments used by the laboratory personal. Identify the level of protection required for handling highly infectious samples and safety gadgets required. How to dispose the used gadgets.	10	1	2
2.	a) Derive Handerson-Hasselbalch equation for acids and bases and mention its importance. (5 marks) b) Calculate the amount of Na Cl required for the preparation of 100 mL of 0.1 mM solution of Na Cl. (Mol. weight of NaCl: 58.0) & Calculate the amount of NaOH required for preparing 10 ml of 0.1 % solution of Na OH. (5 Marks)	10	2	3
3.	Define conductivity. Demonstrate the working principle, methodology, instrumentation of conductivity meter in conductivity measurements.	10	3	2
4.	Separation of molecules based on partition principle'. Demonstrate the chromatography technique that works based on this principle.	10	3	2
5.	What chromatography technique is employed to separate a sample containing a mixture of proteins of different shape and size? Elaborate the principle and methodology used to achieve the separation.	10	3	3